WHAT IS CLAIMED IS:

1. A biological condition measuring apparatus for measuring a biological condition of a living body, said apparatus comprising:

a light emitting unit configured to emit individually first and second lights to a measurement portion of the living body, said first and second lights having first and second wavelengths, respectively, said first and second wavelengths being different from each other;

a light receiving unit configured to receive first and second reflection lights to generate first and second detection signals based on the first and second reflection lights, respectively, said first reflection light being based on the first light reflected from the measurement portion, said second reflection light being based on the second light reflected from the measurement portion, said first and second detection signals having different characteristics from each other due to the difference between the first and second wavelengths; and

a measuring unit configured to measure the biological condition based on the different characteristics of the first and second detection signals.

2. A biological condition measuring apparatus according to claim 1, wherein said first wavelength is longer than the second wavelength, said light emitting unit is configured to control that at least one of an intensity and an amount of the first light is lower than at least one of an intensity and an amount of the second light, and said different characteristics of the first and second detection signals are based on the

difference of the first and second wavelengths, and the difference between the at least one of the intensity and the amount of the first light and the at least one of the intensity and the amount of the second light.

3. A biological condition measuring apparatus according to claim 2, wherein said measuring unit is configured to compare the characteristic of the first detection signal with that of the second detection signal, and to extract a signal from the first and second detection signals according to a result of the comparing, said extracted signal representing the biological condition.

4. A biological condition measuring apparatus according to claim 2, wherein said biological condition includes a pulsebeat component and a component of a movement of the living body, said pulsebeat component being synchronized with a heartbeat of the living body, said light emitting unit is configured to sequentially emit the first and the second lights, said light receiving unit is configured to receive the first and second reflection lights sequentially reflected from the measurement portion, and to sequentially transmit the first and second detection signals to the measuring unit, and said measuring unit comprises:

a converting circuit configured to convert the transmitted first and second detection signals into first and second digitized sequential data, said first digitized sequential data corresponding to the first light, said second digitized sequential data corresponding to the second light;

a frequency-analyzing unit configured to frequency-analyze the first and second digitized sequential data, respectively, to obtain first and

second frequency components from the first digitized sequential data, and third and fourth frequency components from the second digitized sequential data, said first and third frequency components representing the pulsebeat component, said second and fourth frequency components representing the component of the living body's movement; and

an obtaining unit configured to obtain a frequency of at least one of the pulsebeat component and the component of the living body's movement according to the obtained first, second, third, and fourth frequency components.

5. A biological condition measuring apparatus according to claim 1, wherein said light receiving unit includes a sensitivity changing unit configured to change a sensitivity of the first detection signal with respect to that of the second detection signal, thereby extracting a signal representing the biological condition from the first and second detection signals according to the different characteristics of the first and second detection signals, said different characteristics of the first and second detection signals being based on the difference of the first and second wavelengths and the difference between the sensitivities of the first and second detection signals.

6. A biological condition measuring apparatus according to claim 5, wherein said sensitivity changing unit is configured to amplify the first detection signal by a first gain, and the second detection signal by a second gain, said first and second gains being different from each other and corresponding to the sensitivities of the first and second detection

signals, and to extract the signal representing the biological condition from the amplified first and second detection signals.

7. A biological condition measuring apparatus according to claim 6, wherein said first wavelength is longer than the second wavelength, and said first gain is lower than the second gain.

8. A biological condition measuring apparatus according to claim 7, wherein said measuring unit is configured to compare the amplified first detection signal with the amplified second detection signal, and to extract a signal from the first and second detection signals according to a result of the comparing, said extracted signal representing the biological condition.

9. A biological condition measuring apparatus according to claim 1, wherein one of said first and second lights is an infrared light, and other thereof is green light.

10. A biological condition measuring apparatus according to claim 1, wherein said light emitting unit includes at least two light emitting devices configured to emit the first and second lights, respectively, and said light receiving unit includes at least one receiving element configured to receive the first and second reflection lights, respectively.

11. A biological condition measuring apparatus according to claim 10, wherein said at least two light emitting devices are configured to

emit the first and second lights at different timings, respectively.

12. A biological condition measuring apparatus according to claim 10, further comprising a driving unit configured to drive the at least two light emitting devices while changing the intensity of the first light with respect to that of the second light.

13. A biological condition measuring apparatus for measuring a biological condition of a living body, said apparatus comprising:

a light emitting unit configured to emit individually an infrared light and a green right to a measurement portion of the living body;

a light receiving unit configured to receive first and second reflection lights to generate first and second detection signals based on the first and second reflection lights, respectively, said first reflection light being based on the infrared light reflected from the measurement portion, said second reflection light being based on the green light reflected from the measurement portion, said first and second detection signals having different characteristics from each other due to the difference between wavelengths of the infrared light and the green light; and

a measuring unit configured to measure the biological condition based on the different characteristics of the first and second detection signals.

14. A biological condition measuring apparatus according to claim 13, wherein said wavelength of the green light is set within a range from approximately 460 nm to approximately 570 nm, and said

wavelength of the infrared light is set within a range from approximately 780 nm to approximately 1000 nm.

15. A biological condition measuring apparatus according to claim 13, wherein said light emitting unit is configured to control that at least one of an intensity and an amount of the infrared light is lower than at least one of an intensity and an amount of the green light, and said different characteristics of the first and second detection signals are based on the difference of the wavelengths of the infrared light and the green light, and the difference between the at least one of the intensity and the amount of the infrared light and the at least one of the intensity and the amount of the green light.

16. A biological condition measuring apparatus according to claim 15, wherein said intensity of the infrared light is not more than 70 percent of the intensity of the green light.

17. A biological condition measuring apparatus according to claim 13, wherein said biological condition includes a pulsebeat component and a component of a movement of the living body, said pulsebeat component being synchronized with a heartbeat of the living body, said light emitting unit is configured to sequentially emit the infrared and green lights, said light receiving unit is configured to receive the first and second reflection lights sequentially reflected from the measurement portion, and to sequentially obtain the first and second detection signals to the measuring unit, and said measuring unit

comprises:

a converting circuit configured to convert the transmitted first and second detection signals into first and second digitized sequential data, said first digitized sequential data corresponding to the infrared light, said second digitized sequential data corresponding to the green light;

a frequency-analyzing unit configured to frequency-analyze the first and second digitized sequential data, respectively, to obtain first and second frequency components from the first digitized sequential data, and third and fourth frequency components from the second digitized sequential data, said first and third frequency component representing the pulsebeat component, said second and fourth frequency components representing the component of the living body's movement; and

an obtaining unit configured to obtain a frequency of at least one of the pulsebeat component and the component of the living body's movement according to the obtained first, second, third, and fourth frequency components.

18. A biological condition measuring apparatus according to claim 17, wherein said obtaining unit is configured to obtain the frequency of the pulsebeat component and to obtain at least one of a pulse rate and an interval between adjacent pulsebeats based on the frequency of the pulsebeat component.

19. A biological condition measuring apparatus according to claim 13, wherein said light emitting unit includes at least two light emitting devices configured to emit the infrared and green lights,

respectively, and said light receiving unit includes at least one receiving element configured to receive the first and second reflection lights, respectively.

20. A biological condition measuring apparatus according to claim 19, wherein said at least two light emitting devices are configured to emit the infrared and green lights at different timings, respectively, and said at least one receiving element is configured to receive the first and second reflection lights, respectively.

21. A biological condition measuring apparatus according to claim 13, further comprising a driving unit configured to drive the at least two light emitting devices while changing the intensity of the infrared light with respect to that of the green light.

22. A biological condition measuring apparatus according to claim 13, wherein said light receiving unit includes a sensitivity changing unit configured to change a sensitivity of the first detection signal with respect to that of the second detection signal, thereby extracting a signal representing the biological condition from the first and second detection signals based on the different characteristics of the first and second detection signals, said different characteristics of the first and second detection signals being based on the difference of the wavelengths of the infrared and green light, and the difference between the sensitivities of the first and second detection signals.

23. A biological condition measuring apparatus according to claim 1, further comprising a housing having a first wall, a second opened wall opposite to the first wall, and a window wall fitted to the second opened wall,

wherein said light emitting unit is contained in the housing and configured to emit individually the first light and the second light through the window wall to the measurement portion of the living body, said light receiving unit is contained in the housing, and said first reflection light being based on the first light reflected through the window wall from the measurement portion, said second reflection light being based on the second light reflected through the window wall from the measurement portion.

24. A biological condition apparatus according to claim 23, wherein said window wall is provided at its an outer end surface with a stepped portion, said stepped portion includes a first surface, and a second surface through which the first light and the first reflection light are transmitted, said stepped surface being stepped inwardly with respect to the first surface.

25. A biological condition apparatus according to claim 23, wherein said window wall has an outer end surface, said outer end surface includes a first surface and a second surface through which the first light and the first reflection light are transmitted, and said second surface is formed with concave and convex portions.

26. A biological condition apparatus according to claim 23, wherein said light emitting unit includes first and second light emitting devices configured to emit the infrared and green lights, respectively, said light receiving unit includes first and second receiving elements configured to receive the first and second reflection lights, respectively, and said housing is provided with a partition wall mounted at its one end portion on the first wall and its other end portion is fixed to the temperate window wall, thereby partitioning an inner chamber of the housing into a first chamber and a second chamber, said partition wall being made of lightproof material, said first chamber containing the first light emitting device and the first receiving element, said second chamber containing the second emitting device and the second receiving unit.

27. A sensor for sensing a biological condition of a living body, said sensor comprising:

a housing having a first wall, a second opened wall opposite to the first wall, and a window wall fitted to the second opened wall;

a light emitting unit contained in the housing and configured to emit individually first and second lights through the window wall to a measurement portion of the living body, said first and second lights having first and second wavelengths, respectively, said first and second wavelengths being different from each other; and

a light receiving unit contained in the housing and configured to receive first and second reflection lights to generate first and second detection signals based on the first and second reflection lights, respectively, said first reflection light being based on the first light

reflected through the window wall from the measurement portion, said second reflection light being based on the second light reflected through the window wall from the measurement portion, said first and second detection signals having different characteristics from each other due to the difference between the first and second wavelengths,

wherein said window wall is provided at its an outer end surface with a stepped portion, said stepped portion includes a first surface, and a second surface through which the first light and the first reflection light are transmitted, said stepped surface being stepped inwardly with respect to the first surface.

28. A sensor according to claim 27, further comprising a flexible member having translucency and arranged on the stepped surface of the window wall.

29. A sensor for sensing a biological condition of a living body, said sensor comprising:

a housing having a first wall, a second opened wall opposite to the first wall, and a window wall fitted to the second opened wall;

a light emitting unit contained in the housing and configured to emit individually first and second lights through the window wall to a measurement portion of the living body, said first and second lights having first and second wavelengths, respectively, said first and second wavelengths being different from each other; and

a light receiving unit configured to receive first and second reflection lights to generate first and second detection signals based on the

first and second reflection lights, respectively, said first reflection light being based on the first light reflected through the window wall from the measurement portion, said second reflection light being based on the second light reflected through the window wall from the measurement portion, said first and second detection signals having different characteristics from each other due to the difference between the first and second wavelengths,

wherein said window wall has an outer end surface, said outer end surface includes a first surface and a second surface through which the first light and the first reflection light are transmitted, and said second surface is formed with concave and convex portions.

30. A method of measuring a biological condition of a living body, said method comprising:

individually emitting first and second lights to a measurement portion of the living body, said first and second lights having first and second wavelengths, respectively, said first and second wavelengths being different from each other;

receiving first and second reflection lights to generate first and second detection signals based on the first and second reflection lights, respectively, said first reflection light being based on the first light reflected from the measurement portion, said second reflection light being based on the second light reflected from the measurement portion, said first and second detection signals having different characteristics from each other due to the difference between the first and second wavelengths; and

measuring the biological condition based on the different characteristics of the first and second detection signals.

31. A method according to claim 30, wherein said first wavelength is longer than the second wavelength, said emitting step includes controlling that at least one of an intensity and an amount of the first light is lower than at least one of an intensity and an amount of the second light, and said different characteristics of the first and second detection signals are based on the difference of the first and second wavelengths, and the difference between the at least one of the intensity and the amount of the first light and the at least one of the intensity and the amount of the second light.

32. A method according to claim 31, wherein said receiving step includes changing a sensitivity of the first detection signal with respect to that of the second detection signal, thereby extracting a signal representing the biological condition from the first and second detection signals according to the different characteristics of the first and second detection signals, said different characteristics of the first and second detection signals being based on the difference of the first and second wavelengths and the difference between the sensitivities of the first and second detection signals.

33. A method according to claim 31, wherein said biological condition includes a pulsebeat component and a component of a movement of the living body, said pulsebeat component being

synchronized with a heartbeat of the living body, said light emitting unit is configured to sequentially emit the first and the second lights, said receiving step includes receiving the first and second reflection lights sequentially reflected from the measurement portion, and sequentially generating the first and second detection signals, and said measuring step includes:

converting the generated first and second detection signals into first and second digitized sequential data, said first digitized sequential data corresponding to the first light, said second digitized sequential data corresponding to the second light;

frequency-analyzing the first and second digitized sequential data, respectively, to obtain first and second frequency components from the first digitized sequential data, and third and fourth frequency components from the second digitized sequential data, said first and third frequency component representing the pulsebeat component, said second and fourth frequency components representing the component of the living body's movement; and

obtaining a frequency of at least one of the pulsebeat component and the component of the living body's movement according to the obtained first, second, third, and fourth frequency components.

34. A program product readable by a computer communicable with a light emitting unit and a light receiving unit, said light emitting unit being configured to emit individually first and second lights to a measurement portion of the living body, said first and second lights having first and second wavelengths, respectively, said first and second

wavelengths being different from each other, said light receiving unit being configured to receive first and second reflection lights to generate first and second detection signals based on the first and second reflection lights, respectively, said first reflection light being based on the first light reflected from the measurement portion, said second reflection light being based on the second light reflected from the measurement portion, said first and second detection signals having different characteristics from each other due to the difference between the first and second wavelengths, said program product configured to cause the computer to:

control the light emitting unit so that the light emitting unit controls that at least one of an intensity and an amount of the first light is lower than at least one of an intensity and an amount of the second light, and said different characteristics of the first and second detection signals are based on the difference of the first and second wavelengths, and the difference between the at least one of the intensity and the amount of the first light and the at least one of the intensity and the amount of the second light;

compare the characteristic of the first detection signal with that of the second detection signal; and

extract a signal from the first and second detection signals according to a result of the comparing, said extracted signal representing the biological condition.